

APPENDICES

Appendix A - Working Group and Task Force Organization

The LNPAWG, the T&O Task Force, and WWITF, are opened to all parties and are representative of all segments of the telecommunications industry.

LNPAWG Member List

Airtouch Communications
Ameritech
Ameritech Cellular
APCC, Inc.
AT&T
AT&T Wireless Svcs.
ATX Telecom
Bell Atlantic
Bellcore
BellSouth
California PUC
CBT
Cox
CTIA
Florida Public Service Com
Frontier
Green River Systems
GTE
GTE Network Systems
Illuminet
Interstate Fibernet
Lockheed Martin
Lucent Technologies
Maryland PSC
MCI
Nextel
NYNEX
Omnipoint Comm Svcs
Ohio PUC
PACE/COMPTEL
Pacific Bell
PCIA
Perot Systems
SBC
SBC/TRI

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Selectronics
Sprint
Sprint PCS
Stentor
Tekelec
Telefonica de Puerto Rico
Teleport
Time Warner/NCTA
US West
USTA
WorldCom

T & O Task Force Member List

360 Communications
Ameritech
AT&T
ATX Telecom
Bell Atlantic
Bellcore
BellSouth
BellSouth Wireless
California PUC
Cox
DCS
EDS
Evolving Systems, Inc.
GTE - Information Tech.
GTE Network Systems
IBM
Illuminet
Interstate Fiber Net
Lockheed Martin
Lucent Technologies
MCI
MDF Assoc. for Lockheed
Nortel
NYNEX
OPASTCO
Pacific Bell
Pac Bell Mobile Svc
PCIA
Perot Systems
Pocket Com/CTA
SBC

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Sprint
Sprint PCS
Tekelec
Tel Tek Solutions, Inc.
Telecom Software Ent.
Telecom Technologies
Telecommunications Resellers Association
Teleport
Time Warner
US West
WinStar
Worldcom

WWITF Task Force Member List

360° Communications
AGCS
AirTouch
Amdahl
Ameritech Cellular
AT&T
AT&T Wireless
Bell Atlantic Mobile
Bellcore
BellSouth
Canadian Radio, Television, & Telecommunications Commission
Cellular One
Comcast Cellular
CTIA
DSET
Ericsson
Evolving Systems, Inc.
GTE Information Technology
GTE Network Services
GTE Labs
Illuminet
L. A. Cellular
Lockheed Martin
Lucent Technologies
MCI
MCI Metro
Microcell Connexions Inc.
Microcell Telecom
Nortel
Ohio PUC

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Omnipoint Corporation
Pacific Bell
Pac Bell Mobile Svc
Perot Systems
Prime Co. Personal Communications
SBC
Southwestern Bell
Sprint
Sprint PCS
Tekelec
Telecom Software Enterprises
Teleport Comm Group
Time Warner Communications
USTA
US West
World Com

Appendix B - Working Group and Task Force Meetings

LNPAWG, T&O Task Force, and WWITF meetings were scheduled concurrently, generally on a monthly basis in various cities throughout the United States.

Week Of	City & State
June 30, 1997	Chicago, IL
July 28, 1997	Atlanta, GA
August 18, 1997	Washington DC
September	no meeting
October 10, 1997	Washington DC
November 10, 1997	Washington DC
December 8, 1997	Tampa, FL
January 7, 1998	Kansas City, MO
February 9, 1998	Dallas, TX
March 16, 1998	Washington DC
April 13, 1998	Washington DC

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**Appendix C - Architecture & Administrative Plan for Local Number
Portability (see separate attachment)**

Appendix D - Rate Center Issue

1.1 Cover Letter to the NANC

January, 7, 1998

Dear Alan Hasselwander,

The attached documentation package communicates to the North American Numbering Council (NANC) an issue that has been diligently worked in the Wireless Wireline Integration Task Force (WWITF) for several months without resolution. This issue has been termed by the WWITF as "rate center disparity." The task force concludes that there is a difference, within the context of Service Provider Portability, between porting a subscriber, from a wireline service provider to a wireless service provider, and, from a wireless service provider to a wireline service provider. However, there is a lack of consensus as to whether this difference warrants a policy change from the NANC.

There are three key questions detailed within the documentation for which Local Number Portability Architecture Working Group (LNPA/WG) is seeking direction from the NANC. These questions need to be resolved before the LNPA/WG Report to the NANC on wireless and wireline integration can be completed. The questions are:

- Does the difference in the scope of porting capabilities between wireless and wireline service providers create a competitive disadvantage which would be inconsistent with the FCC's objectives for numbering?
- If so, is this competitive disadvantage overridden by the FCC's order to implement wireless - wireline portability to encourage CMRS - wireline competition?
- Would the inability in certain situations for a wireless end user, staying at the same location, to keep their telephone number when changing to a wireline service provider be acceptable from a statutory or regulatory perspective?

The LNPA/WG report on wireless and wireline integration is due to the NANC on May 18, 1998. In order for the LNPA/WG to meet this requirement it is necessary for the NANC to resolve this dispute. The subsequent direction should be forthcoming by March 16, 1998 so that recommendations can be included in the Integration Report due May 18, 1998.

Respectfully,

Woody Kerkeslager

Terry Appenzeller

1.2 Background Information

Report from Wireless Wireline Integration Task Force to the North American Numbering Council (1/20/98) Rate Center Issue

Issue Statement: It is recognized that there is a difference within the context of Service Provider Portability with respect to porting a subscriber from a:

- Wireline Service Provider to a wireless service provider and
- Wireless Service Provider to a wireline service provider

Within the WWITF, there is a lack of consensus whether the difference constitutes a lack of competitive parity.

Background Material

Wireless - Wireline Service Provider Portability

1.1 Wireline Rating Architecture

The fundamental building block of the wireline rating architecture is the rate center. A rate center is a geographical area which utilizes a common geographical point of reference, called a rating point and defined by vertical and horizontal (V/H) coordinates, for distance measurements associated with call rating. In Figure 1, a call from a customer in Rate Center D to another customer in Rate Center 1 would be rated on the basis of the distance between their respective V/H coordinates.

A rate center may encompass a single wire center area, a portion of a wire center or multiple wire center areas. Rate Center 1 (Figure 1) might consist of multiple Incumbent Local Exchange Carrier (ILEC) wire center areas while Rate Center 3 might include only a single wire center area. Rate center boundaries are approved by state commissions.

1.2 Wireline Local Calling Areas

Calls between customers located in different rate centers may be billed at local flat rate, local measured rate or toll. The local calling area may be defined in several different ways. Each local exchange carrier defines its own originating calling area which are included in their tariffs filed with state commissions. In some states the distance between the originating and terminating rate center V/H coordinates provide the basis for the differentiation between local and toll calling (e.g. less than 12 miles is local and 12 miles or greater is toll). In other states local calling areas are not distance sensitive, but are defined on the basis of geography as shown in Figure 1. These local calling areas frequently encompass multiple ILEC rate centers.

1.3 Wireline NXX Assignment

For ILECs, NXXs are generally assigned to individual central office switches for use in their respective geographic wire center serving area within a rate center. Competitive Local Exchange Carriers (CLECs) are expected to have fewer switches than the imbedded ILEC architecture. CLEC wire center serving areas may encompass not only multiple ILEC wire centers, but also multiple rate centers. For example, a CLEC might have a single switch serving one or more MSAs. In order to maintain rate center integrity and avoid consumer confusion, in most areas CLECs will need a minimum of one NXX for each rate center within their planned service area. These NXXs will be used for CLEC customers that are not porting a ILEC telephone number. For example, in Figure 1, a CLEC wishing to serve customers located in the central zone and tier 1 would need 8 NXXs, one for rate centers 1 through 8.

1.4 Wireline TN Assignment

A customer is assigned a telephone number based on their physical location. ILEC customers will be assigned a telephone number from the NXX(s) assigned to the switch that serves the wire center and rate center area in which the customer is physically located. CLEC customers will be assigned a telephone number from the NXX(s) assigned to the CLEC for the rate center area in which the customer is physically located. These assignment procedures ensure the retention of the rating structure integrity.

2.1 Wireless Rating Architecture

Wireless carriers have flexibility in defining their own rating architectures. Factors in determining how to rate a call may include time, distance, whether the call is mobile to mobile versus mobile to land, time-of-day, and aggregate minutes of use per month. Wireless carriers are not regulated at the state or federal level concerning prices or rating, nor are they limited to incorporating originating and terminating rate centers in their rate structures. Their rating structure is solely a business decision.

2.2 Wireless Local Calling Areas

Since they have flexibility in determining their rating structures, wireless carriers define local calling areas to meet the competitive needs of the markets. Wireless carriers have no domestic requirements to file state or federal tariffs. However, all wireless carriers have the concept of calling areas in which no additional toll charges are applied for calls. In some cases, this may be based on:

- BTA (Basic Trading Area),
- MTA (Major Trading Area),
- RSA (Rural Serving Area)
- MSA (Metropolitan Statistical Area),
- State
- Combination of States
- LATA (Local Access Transport Areas)
- NPAs

In addition, these can be combined in a variety of ways with the above rating schemes.

2.3 Wireless NXX Assignments

NXX codes that are assigned to wireless carriers are associated to a specific wireline rate center and are communicated via the LERG. These are assigned to wireline rate centers in order to accomplish land to mobile rating. However, once NPA-NXXs are assigned to a wireless carrier, wireless carriers may select any one of their NPA-NXXs when allocating numbers to a subscriber. The WSP may select a particular NPA-NXX value based on customer desires of calling areas for

land to mobile calls, mobile to land calls, or a combination of both. Alternatively, a wireless carrier may choose to select an NPA-NXX value that is physically closest to the subscriber billing address. There are no state or federal requirements to associate an NPA-NXX for a new subscriber based on their residence, billing, or other location. For example in Figure 2 RCs (Rate Center) 2 - 7 have local calling to RC 1, and RCs B - E, 7, 8 have local calling to RC A. Note that RCs A - E are located in NPA 2. Assuming there was customer demand for these calling scopes the WSP might assign an NXX from NPA1 (214-543) to RC 1 as a wireless exchange W-5 and an NXX from NPA2 (972-234) to RC A as a wireless exchange W-11.

2.4 Wireless Telephone Number Assignment

The customers physical, residential, business, or billing location is not a necessary requirement in determining which numbers are assigned. Rather, factors such as originating or terminating calling scopes in relationship to wireline networks may be a determining factor. The NPA-NXX portion of a telephone number of a wireless subscriber may be selected based on the criteria described above in Section 2.3. There is no requirement that a subscriber limit their service usage to certain rate centers, nor is their physical location necessarily a determining factor in which number they are assigned. In Figure 2, if a customer whose billing address was located in RC X1 wanted to have local calls to their wireless phone from callers located in RCs 1- 8, they would be assigned a telephone number from an NXX in wireless exchange W-5 (214-543) assigned to RC 1.

3.0 Limitations on the Scope of Service Provider Portability

Due to the need to ensure proper rating and routing of calls, the NANC LNPA Architecture Task Force agreed that service provider portability was limited to moves within an ILEC rate center. Section 7.3 of the NANC LNP Architecture & Administrative Plan report which has been adopted by the FCC, states, "portability is technically limited to rate center/rate district boundaries of the incumbent LEC due to rating/routing concerns". As shown in Figure 3, a wireline customer could move from the northeast corner of RC 1 to the southwest corner of the same rate center and port their number, either when changing service providers or for a move within their own network. However a wireline customer could not move between RC 1 and RC 2 and retain their telephone number.

4.0 Location Portability

Location portability will extend the scope of number portability beyond rate center or local calling area boundaries, but there are numerous significant issues that must be addressed in setting the scope of location portability. These issues include, but are not limited to: the loss of the 1+ toll identifier that some state regulators have maintained is a significant consumer issue, the ability to determine the jurisdictional nature of calls to numbers that have been ported across a state boundary, the ability to recognize an interLATA call for routing to the customer's preferred interexchange carrier, the impact of porting beyond a geographical NPA boundary, consumer confusion issues, and development of the means to rate and bill calls for all of the above potential scenarios. The question of location portability was delegated to the states by the FCC in their First Report and Order and Further Notice of Proposed Rulemaking in CC Docket 95-116, released 7/2/96.

5.0 Example Porting Scenarios

The following scenarios reflect rate center limitations included in Section 3.0. See Figures 4A - 4D.

Scenario A - Wireline subscriber with telephone number 214-789-2222, located in RC 7, wishes to change to wireless service while remaining at the same location.

Porting would be permissible as long as the wireless service provider has established an interconnect agreement for calls to this wireless telephone number in RC 4.

Scenario B - Wireline subscriber, 214-456-1111 located in RC 4 is moving to RC 6 and wishes to change to wireless service.

Porting would be permissible as long as the wireless service provider has established an interconnect agreement for calls to this wireless telephone number in RC 4. Because the subscriber will have terminal mobility and the actual location of the phone will vary, the move of the billing location to another rate center does not impact rating.

Scenario C - Wireless subscriber, 972-234-5555, whose billing location is in RC A, wishes to change to wireline service provider while remaining at the same location.

Porting would be permissible because the wireless NPA-NXX, 972-234, is assigned to RC A and the subscriber is located in RC A.

Scenario D - Wireless subscriber, 972-234-3333, whose billing location is in RC F, wishes to change to wireline service.

Porting would not be permissible because the subscriber is located in RC F and the subscriber's telephone number is assigned to RC A. If this were allowed calls from other customers located in RC F to this subscriber would be toll since calls from RC F to RC A are toll and the ported telephone number would be associated with RC A.

6.0 Parity Issues

The above examples provide only a small sample of potential porting scenarios. If all of the potential scenarios were examined, the following patterns would emerge:

Porting from a wireline service provider to a wireless service provider is permitted as long as the subscriber's initial rate center is within the WSP's service area and the WSP has established interconnection/business arrangements for calls to wireless numbers within that rate center. This could apply even when the subscriber is moving to another LATA because of the terminal mobility characteristic of almost all wireless applications. With terminal mobility the subscriber can be physically located anywhere.

Porting from a wireless service provider to a wireline service provider is *only* allowed when the subscriber's physical location is within the wireline rate center associated with the wireless NPA-NXX.

This creates a difference from an end user perspective when porting from a wireline to wireless service provider versus porting from a wireless to a wireline service provider. This difference is due to the inherent differences in service areas and terminal mobility between wireline and wireless service providers.

7.0 Federal Statutory and Regulatory Policies

Definition of Service Provider Portability - Section 3, Telecommunications Act of 1996. "The term 'number portability' means the ability of users of telecommunications services to retain, at

the same location, existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to another.”

Federal Policy Objectives for Numbering - Report and Order, CC Docket No. 92-237 Released 7/13/95.

- Administration of the plan (NANP) must seek to facilitate entry into the communications marketplace by making numbering resources available on an efficient, timely basis to communications service providers.
- Administration of the NANP should not unduly favor or disadvantage any particular industry segment or group of consumers.
- Administration of the NANP should not unduly favor one technology over another. The NANP should be largely technology neutral

Location Portability - First Report and Order and Further Notice of Proposed Rulemaking in CC Docket 95-116, released 7/2/96. The FCC delegated the question of location portability to the states. The FCC stated in paragraph 186, “To avoid the consumer confusion and other disadvantages inherent in requiring location portability, however, we believe state regulatory bodies should determine, consistent with the Order, whether to require carriers to provide location portability. We believe the states should address this issue because we recognize that “rate centers” and local calling areas have been created by individual state commissions, and may vary from state to state.”

Portability between CMRS and Wireline Service Providers - First Report and Order and Further Notice of Proposed Rulemaking in CC Docket 95-116, released 7/2/96.¹⁴

- Paragraph 155: “This mandate is in the public interest because it will promote competition among cellular, broadband PCS, and covered SMR carriers, as well as among CMRS and wireline providers. We therefore include those carriers in our mandate to provide long term service provider portability ...”
- Paragraph 160: “We further conclude that number portability will promote competition between CMRS and wireline service providers as *CMRS providers offer comparable local exchange and fixed commercial mobile radio services....* Finally in the Fixed CMRS Notice, the Commission tentatively concluded that PCS and cellular providers will provide *fixed CMRS local loop services, and that such carriers will directly compete with traditional wireline local exchange carriers*. We believe, for the reasons stated above, that service provider portability will encourage CMRS-wireline competition, creating incentives for carriers to reduce prices for telecommunications services and to invest in innovative technologies, and enhancing flexibility for users of telecommunications services.”
- Paragraph 161: “...Several parties have indicated that at least some CMRS providers intend to compete with wireline carriers in the local exchange market. To do so effectively, *CMRS carriers are likely to change their pricing structures to resemble more closely wireline pricing structures.*”

8.0 Key Escalation Issues

There are three key questions which need to be resolved before a method for wireline wireless portability can be selected:

- Does the difference in the scope of porting capabilities between wireless and wireline service providers create a competitive disadvantage which would be inconsistent with the FCC’s objectives for numbering?

¹⁴ Italics in following excerpts added for emphasis.

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- If so, does this competitive disadvantage override by the FCC's order to implement wireless - wireline portability to encourage CMRS - wireline competition?
- Would the inability in certain situations for a wireless end user, staying at the same location, to keep their telephone number when changing to a wireline service provider acceptable from a statutory or regulatory perspective?

APPENDIX A

Potential Alternative Methods to Achieve Parity Considered

- I. Require assignment of NXXs to wireless service providers on a per rate center basis, and require assignment of telephone numbers to wireless customers based on their billing location.
 - A. This would have a significant negative impact on NPA exhaust.
 - B. There is no technical need from a routing or rating perspective within the wireless service provider's network for this restriction since with terminal mobility the physical billing location of a wireless set is not relevant.
- II. Require alignment of local service areas between wireless and wireline service providers.
 - A. This is problematic from a jurisdictional basis since wireless service providers are regulated federally and since local calling areas for wireline service providers are largely regulated on a state basis.
 - B. Wireline local service areas are restricted from extending beyond LATA boundaries.
- III. Require wireless and wireline service providers to adopt the same rating methods.
 - A. Same jurisdictional problems as described in B.
 - B. Many state regulators (and consumers) would not be in favor of mandatory measured rate service for wireline service.
 - C. Wireless rating methods are business decisions and are not subject to regulation.
- IV. Defer wireless portability until state commission order implementation of location portability beyond the rate center, NPA boundary, state and LATA.
 - A. Location portability would be very complex and costly to implement.
 - B. Location portability has been delegated to state commissions.
- V. Limit wireless - wireline portability to fixed location/non-roaming wireless services where the wireless service provider has agreed to adopt numbering assignment and portability rules consistent with wireline service providers.
 - A. Does not provide full wireless - wireline portability.
- VI. Limit service provider portability to intra-wireline service provider and intra-wireless service provider changes.
 - A. Not compliant with the FCC requirements in their First Report and Order.

1.3 Wireline Position Paper

**Wireless Wireline Integration Task Force
Rate Center Issue Position Paper
North American Numbering Council
January 20, 1998**

EXECUTIVE SUMMARY

The paper addresses the three key questions being referred to the NANC by the WWITF:

1. Does the difference in scope of porting capabilities between wireless and wireline service providers create a competitive disadvantage which would be inconsistent with the FCC's objectives for numbering?
2. If so, is this competitive disadvantage overridden by the FCC's order to implement wireless - wireline portability to encourage CMRS - wireline competition?
3. Would the inability in certain situations for a wireless end user, staying at the same location, to keep their telephone number when changing to a wireline service provider be acceptable from a statutory or regulatory perspective?

All parties recognize that a difference exists in the scope of number portability when porting from a wireless to a wireline service provider as compared to porting from a wireline to a wireless service provider. Porting from a wireline to a wireless service provider is virtually unlimited - the end user can be physically located anywhere, while porting from a wireless to a wireline service provider is narrowly limited to the situation where the wireless end user is physically located within the rate center associated with the NPA-NXX of the end user's telephone number. This is a significant disparity in porting capabilities which would create a distinct competitive disadvantage to wireline service providers. This is clearly not in compliance with the FCC's Policy Objectives for Numbering in that it unduly disadvantages an industry segment, wireline service providers, and it unduly favors wireless technology.

Some wireless participants have argued that resolution of this disparity is not a prerequisite to meeting the FCC's ordered implementation of service provider portability between wireless and wireline service providers. They suggest that the disparity is not unreasonable compared to the benefit of portability to foster CMRS - wireline competition and thus is overridden by the FCC's mandate to integrate wireless into number portability. It is not plausible that the FCC would condone the imposition of a significant competitive disadvantage on a competing industry segment, wireline carriers, in order to encourage competition between two industry segments. The FCC's orders on number portability were not to the exclusion of their Policy Objectives for Numbering. Competitive parity is not optional.

Finally, implementation of wireless - wireline number portability must be compliant with the definition of portability contained in the Telecommunications Act of 1996, that is, a end user staying at the same location must be able to change service providers and retain their telephone number. With the current method/architecture, wireless customers staying at the same location would not be able to retain their number when they change to a wireline service provider if they are physically located outside of the rate center associated with the NPA-NXX of their assigned telephone number.

The attached paper addresses these issues further and examines alternatives for the introduction of wireless - wireline number portability within the scope of the FCC's policy objectives for numbering.

I. ASSUMPTIONS

- A. The following is responsive to the FCC's directive that the NANC develop standards and procedures necessary to provide for CMRS participation in local number portability. It is not an endorsement of number portability between CMRS providers or between CMRS and wireline service providers.
- B. There are two key criteria that any service provider portability method must meet: 1) rate center integrity, which is required in the wireline industry to ensure the ability to properly rate, bill and route calls, and 2) competitive parity which is a principle fundamental to all FCC orders dealing with numbering and competitive issues.

II. DISCUSSION AND IMPACTS

A. Rate Center Integrity

- 1. Section 7.3 of the Architecture Task Force report which was adopted by the FCC states "portability is technically limited to rate center/rate district boundaries of the incumbent LEC due to rating/routing concerns." It also noted

that additional boundary limitations could be required due to E911 or NPA serving restrictions. Although this originally addressed only wireline service providers, service provider portability between wireline and wireless service providers via LRN continues to be technically limited to the rate center.

2. Rate centers have been established by state regulators, and are the fundamental building block for toll/local differentiation, toll rating and network routing. Rate center integrity (consistent rate center boundaries) is essential to maintain these capabilities. Inconsistencies create ambiguities in identifying a terminating customer's location which in turn create inconsistencies in originating calling scopes and toll rating, consumer confusion and potential problems routing to a customer's presubscribed intraLATA or interLATA carrier.
3. Additionally, the initial introduction of numbering pooling is planned at the rate center level. Rate center consistency is a requisite part of that introduction, and inconsistencies would unnecessarily complicate and delay the introduction of pooling or could create the need for multiple pools.

B. Competitive Parity

1. The FCC's "Policy Objectives for Numbering" included in their Report and Order, CC Docket No. 92-237 Released 7/13/95 provides overarching principles for all NANP issues:
 - Administration of the plan (NANP) must seek to facilitate entry into the communications marketplace by making numbering resources available on an efficient, timely basis to communications service providers.
 - Administration of the NANP should not unduly favor or disadvantage any particular industry segment or group of consumers.
 - Administration of the NANP should not unduly favor one technology over another. The NANP should be largely technology neutral
2. Currently available wireless-wireline porting methodologies proposed in the WWITF have met the criterion of rate center integrity within the technical limitations of LRN service provider portability, but have not met the criterion of competitive parity included in the FCC's Policy Objectives for Numbering and their orders addressing interconnection and other competitive issues.
3. As indicated in Section 6.0 of the Report from Wireless Wireline Integration Task Force to the North American Numbering Council (12/16/97),

"Porting from a wireline service provider to a wireless service provider is permitted as long as the subscriber's initial rate center is within the WSP's service area and the WSP has established interconnection/business arrangements for calls to wireless numbers within that rate center. This could apply even when the subscriber is moving to another LATA because of the terminal mobility characteristic of almost all wireless applications. With terminal mobility the subscriber can be physically located anywhere.

Porting from a wireless service provider to a wireline service provider is *only* allowed when the subscriber's physical location is within the wireline rate center associated with the wireless NPA-NXX."

4. Since wireless telephone numbers are not assigned based on the physical service location of the end user, it is expected that in the majority of cases wireless end users will not be physically located within the rate center area. These end users would have to change their number to change to wireline service. This disparity clearly favors the wireless industry segment and creates an unfair competitive disadvantage to the wireline industry segment.
5. The root causes of this disparity are inherent differences in rating methods, service areas, terminal mobility and number assignment methods between wireline and wireless service providers and technical LRN limitations. A number of potential alternatives to eliminate this disparity while maintaining rate center integrity have been identified and considered, but none were found to be practical solutions. Two of these alternatives are examined more closely in Sections 2.3 -2.4.

C. Rate Center Consolidation/Modification

1. Some wireless participants have indicated that the problem is solely due to limitations of the wireline service providers' billing systems and rate center structure, which if modified, would alleviate all concerns. Rate centers, which are the fundamental building block of wireline rating systems, have been created by individual state commissions. Wireless service does not utilize rate centers other than for rating of calls from wireline end users. As indicated in Section 2.1 of the 12/16/97 report to the NANC, wireless carriers have flexibility in defining their rating architecture - it is solely a business decision. Besides the issue of preemption of the state regulators rights to establish rate center boundaries, forced modification of wireline *or* wireless rating systems is not an appropriate solution.
2. Rate center consolidation has also been suggested as an alternative to eliminate this disparity. Rate center consolidation is being considered by some state commissions as a means to conserve NXX codes. If ordered by a state, it would enlarge the geographic area of a rate center which in turn would reduce the disparity in porting. However, wireless service areas are not limited to rate centers, but can extend beyond rate center, NPA, state and LATA boundaries, so enlarging the rate center will not eliminate the disparity. Additionally consolidation may not be appropriate in many states, and as indicated in 2.3.1, forced consolidations would raise the issue of preemption of what the FCC has recognized as a state matter.

D. Numbering Alignment

1. This alternative assumed that both wireless and wireline service providers would use the same NXX and telephone number assignment rules and conventions to meet the rate center integrity and parity criteria. This would require wireless service providers to be assigned an NXX for each rate center in which they offered service and the assignment of telephone numbers based on the physical location of the wireless customer.
2. This alternative was discarded because of the impact on NPA exhaust and the fact that there is no technical need from a routing or rating perspective within the wireless service provider's network for this restriction. Because most wireless applications include terminal mobility, there is no technical

requirement for association of the telephone number and a geographic location of the user.

III. Conclusions/Recommendations

- A. The FCC's mandate for service provider portability between wireless and wireline service providers was not a separate and distinct order but rather was part of a complex series of orders on number portability and numbering principles in general. It therefore cannot be considered in isolation, but must be considered in context of the other requirements specified by the FCC including the minimum performance criteria, delegation of location portability to the states, and policy objectives for numbering. Parity between service providers is a minimum criteria for portability between wireless and wireline service providers.
- B. In their Second Report and Order the FCC directed the NANC to develop standards and procedures necessary to provide for CMRS provider participation in number portability and to provide recommendations to the Commission. The FCC recognized that changes to local number portability standards and procedures would probably be needed to support wireless number portability and that differences in service area boundaries between wireline and wireless service would need to be considered. However, neither the FCC or the industry understood the complexity or the scope of the changes that portability between wireless and wireline service providers would entail.
- C. The WWITF began an in depth discussion of these issues in its August 1997 meeting and reached consensus to refer the issue to the NANC at the September NANC meeting. However immediately before the September NANC meeting several WWITF members complained that they had not had adequate time to review the material and disagreed that referral was necessary. This has resulted in a 3 to 4 month delay in getting the issue resolved with no substantive change in the background material or issue that was planned for the NANC in September. Much of the intervening WWITF meetings have been spent debating whether a disparity exists and whether the disparity needed to be resolved or if the existing method/architecture was adequate.
- D. The background material provided to WWITF members in August included a number of potential alternatives to resolve the disparity. However, none of these provide a viable solution available today that meets the minimum criteria of parity and rate center integrity. Additionally, the available method/architecture does not meet the definition of number portability found in the Telecommunications Act of 1996 and the FCC's First Report and Order and Further Notice of Proposed Rulemaking (FNPRM) in CC Docket 95-116 because some wireless end users staying at the same location would not be able to change to a wireline service provider and retain their telephone number. Implementation of this method/architecture would not constitute compliance with the FCC's ordered implementation of CMRS number portability.
- E. While no method exists today, it is important to note that no competition exists today between wireless and wireline services, and by most experts, neither is expected to provide services which will replace the other in the foreseeable future. The one exception to this is wireless local loop, where wireless technology is used to replace the physical loop facility to the end user service location. Because this is a replacement local loop architecture, rather than a service, this fixed location, non-roaming situation should be considered separately.
- F. Because no service competition exists and is not expected in the foreseeable future, the recommended course of action is to defer the introduction of portability between wireless

and wireline service providers until a clear and real competitive need exists. This would allow the natural course of competition in the marketplace to address the issues of rate center integrity, service areas, pricing methodology and the LNP provisioning processes between service providers.

- G. There is only one technical alternative that has been identified that can meet the FCC's requirements including the minimum criteria identified above - location portability beyond rate center, NPA, state and LATA boundaries. In the First Report and Order and FNPRM, the FCC delegated location portability to the states, "To avoid the consumer confusion and other disadvantages inherent in requiring location portability, however, we believe state regulatory bodies should determine, consistent with the Order, whether to require carriers to provide location portability. We believe the states should address this issue because we recognize that "rate centers" and local calling areas have been created by individual state commissions, and may vary from state to state."
- H. Location portability is expected to be an enormous undertaking which could be at least as large in scope, complexity and cost as service provider portability. In addition, it will have significant consumer impact due to the loss of traditional toll service indicators and NPA boundary restrictions. Location portability also raises significant regulatory and jurisdictional issues that will need to be addressed at federal and state levels. Location portability should not be introduced *until adequate market demand exists* to support the associated enormous costs or until there is *a real and compelling need* from a competitive perspective and *cost recovery* mechanisms developed. Because competition does not currently exist between wireless and wireline services, location portability should not be advanced to provide number portability between wireless and wireline service providers.
- I. Wireless Local Loop/Fixed Location, Non Roaming Wireless Applications
1. As noted earlier, wireless technology is being used in some instances to replace existing or avoid placement of physical loop facilities, and there may be a need to identify a means to address number portability for these situations. In the Fixed CMRS Notice the Commission tentatively concluded that wireless local loop would be provided by CMRS providers, however, this technology has also been used within the wireline industry in the past.
 2. In order for number portability to work with this fixed location application, wireless service providers would need to utilize wireline numbering conventions including the assignment of NXXs to each rate center where the application is being used and the assignment of telephone numbers based on the physical service location of the end user. Prior to the availability of number pooling this could create some additional pressure on NXX codes. However, new NXX codes would only be required for new customers as existing wireline customers would already be assigned telephone numbers. Considering the limited nature of the application and the existing rate of NXX code usage by wireless service providers, the increase in NXX code demand need not be significant. This proposal would provide wireless service providers an option for participating in number portability with wireline service providers if the need existed.
- J. Summary
- The difference in porting capabilities between wireless and wireline service providers with the existing method/architecture creates a significant competitive disadvantage to wireline service providers. Despite the absence of real competition between wireless and wireline

service providers today this competitive disparity is not consistent with the Commissions policies and should not be allowed.

- The FCC's orders on number portability were not intended to exclude the Commission's requirements for competitive parity and thus do not override their Policy Objectives for Numbering.
- There are no alternatives currently available for wireless wireline number portability which meet these criteria. The current method/architecture does not meet the definition of number portability in the Telecommunications Act of 1996, and if implemented would not constitute compliance with the FCC's orders on number portability.
- Location portability beyond rate center, NPA, state and LATA boundaries is the only identified technical alternative which meets the minimum criteria for wireless - wireline portability. However in light of the absence of substantive wireless - wireline service competition and the complexity, scope and costs of location portability, it is recommended that location portability not be advanced and that wireless - wireline portability, other than the fixed location applications discussed in 3.8, be delayed until a clear and real competitive need exists.

1.4 Wireless Position Paper

1.0 Executive Summary

WWITF recognizes that fundamental differences exist between the operations of wireless and wireline carriers, and that these differences impact Service Provider portability with respect to porting both to and from wireline and wireless service providers. Recognizing these differences, in the *Number Portability Second Report and Order* in CC Docket 95-116, the FCC mandated that the North American Numbering Council (NANC) incorporate the wireless service providers into number portability. NANC, in turn, assigned this task to the Local Number Portability Administration Selection Working Group (LNPA WG) which established the Wireless Wireline Integration Task Force (WWITF) to identify issues and recommend changes to the wireline-developed architecture to permit full integration of the wireless service providers. As recently as December 5, 1997, the FCC's intention to include all wireless carriers, cellular, PCS and covered SMR, was reaffirmed.

During its deliberations, the WWITF has identified a so-called "disparity" which would exist with the current architecture, making it impossible for some wireless subscribers to port to wireline carriers. No such restriction would prevent wireline subscribers from porting to a wireless carrier. This apparent "disparity" is based solely on the wireline carriers' position that the limitation of Service Provider portability to the wireline-established rate centers must remain an inviolable provision of the number portability architecture. Although there is consensus within WWITF of one mechanism—location number portability—that would ameliorate the claimed "disparity," all parties do not agree that location portability is a prerequisite to the implementation of Service Provider portability between wireline and wireless carriers. Indeed, no technical barrier has been identified which would prevent the full integration of wireless service providers into wireline portability from continuing, on schedule, while the WWITF develops a solution that would give all telecommunications users the benefits of number portability.

The WWITF has spent considerable effort trying to resolve this issue. However, it has not made any significant progress toward defining the changes to the existing number portability architecture that would be necessary to resolve the "disparity" issue and incorporate wireless carriers. Instead, proposals have been made to cease the integration of wireless carriers altogether, to delay integration of wireless carriers until location portability is ordered and fully developed or to limit wireless wireline portability to only fixed-wireless alternatives to wireline service. Clearly, each of these alternatives falls short of the FCC's objective to enhance competition

between wireless and wireline carriers. Many wireless service providers, however, believe that a final resolution of the "disparity" issue is unnecessary for the implementation of wireless wireline portability to continue.

Lack of progress by the WWITF does not relieve NANC from meeting its FCC directives to incorporate wireless. Nor is it a basis to delay or negate such aspects of the *Number Portability Second Report and Order*. It is recommended that NANC direct WWITF to define a solution to the "disparity" issue and that wireless wireline portability will continue on schedule, even with the temporary "disparity," until a defined solution can be implemented.

2.0 Assumptions

2.1 Fundamental Differences

During its identification of issues to be addressed, WWITF developed the following consensus description of the inherent assumptions of the defined Service Provider portability architecture when applied to wireless wireline portability.

ASSUMPTIONS FOR WIRELESS WIRELINE SERVICE PROVIDER PORTABILITY:¹⁵

COMMON:

1. In the context of Service Provider Portability the NPA-NXX is associated with a single rate center.
2. Call rating to the caller is based upon the NPA-NXX of the called TN.

WIRELINE PORTING:

1. A wireline subscriber's physical location must be in the same Rate Center as defined by the wireline subscriber's NPA-NXX.
2. When porting to a wireline service provider, Common #1 above still applies.

WIRELESS PORTING:

1. Wireless subscriber's physical location may be different than the Rate Center defined by the NPA-NXX.
2. Porting to a wireless service provider can occur as long as the rate center associated with the porting TN is geographically located within the serving area of the ported to Wireless Service Provider and the Wireless Service Provider has or establishes a business or interconnect arrangement for incoming calls to the ported TN.

The fundamental difference between wireline and wireless service is:

Wireline service is fixed to a specific location. The NPA-NXX portion of the subscriber's telephone number is associated with a specific geographic rate center, and the subscriber's service must be sited within that rate center's geography.¹⁶

¹⁵ This factual description of porting between wireless and wireline, in terms of assumptions and conditions, was tentatively agreed upon during the Oct 6-7, 1997 WWITF meeting.

¹⁶ Wireline carriers do offer Foreign Exchange Service where a customer can receive a telephone number from a different rate center than their physical location. Further, wireline carriers can provide a "personal mobility" service as defined by the ITU-T.

Wireless service is mobile and not fixed to a specific location. While the wireless subscriber's NPA-NXX is associated with a specific geographic rate center, the wireless service is not limited to use within that rate center.

Consequently, when a wireless subscriber ports a number to a wireline carrier, the potential exists that the subscriber's NPA-NXX will not associate with their desired wireline service rate center.

2.2 Issue Awareness

The FCC is aware of the above fundamental aspects of wireline and wireless operation and that terminal mobility is an intrinsic part of Commercial Mobile Radio Service (CMRS). Indeed, the FCC directed NANC to squarely address this issue when it stated:

"The NANC must also consider other issues of concern to CMRS providers, such as how to *account for differences between service area boundaries for wireline versus wireless services* and how to implement number portability in a roaming environment."¹⁷

This issue, in fact, has been known for some time. The conditions necessary for porting to a wireless or wireline provider were investigated by the wireless industry in early 1997 and released in the April 11, 1997 document: *CTIA Report on Wireless Number Portability*. Section 1.6.3 ("Porting To and From") discussed the criteria necessary when porting to and from wireless wireline carriers:

"Consequently, to maintain consistent rating from the calling party's perspective, porting from a WSP (Wireless Service Provider) to a wireline service provider can only occur when the resulting wireline service is geographically located within the wireline rate center associated with the ported MDN (mobile directory number)."¹⁸

Many of the service provider participants in the CTIA activity that produced the above report are participants in the NANC WWITF.

3.0 Discussion/Impacts

3.1 Possible Solutions

Although several alternatives to resolve the apparent "disparity" issue have been identified, most either do not meet the implementation objectives defined by the FCC; have a negative impact on numbering resources; cause severe customer disruption; or, result in new disparities with harsher and longer term consequences than the issue under consideration. However, many wireless service providers do not agree that arriving at a perfect solution is a necessary prerequisite to the implementation of wireless wireline portability. They argue, here, that the benefits to competition of number portability transcend any temporary "disparity" that may occur while a longer-term solution is realized.

Among the alternatives considered are:

3.1.1 Location Portability

WWITF reached consensus that location portability could resolve the parity issue, as documented in the background section: "Location portability may extend the scope of number portability beyond the rate center..."¹⁹ Various issues have been identified regarding location portability, but the capability has been recognized as providing additional benefits to consumers and is discussed as a mechanism involved in certain types of number pooling. However, there are no

¹⁷ Telephone Number Portability, *Second Report and Order*, CC Docket 95-116 (rel. Aug. 18, 1997), ¶ 91 ("*Number Portability Second Report and Order*") (emphasis added).

¹⁸ CTIA Report of Wireless Number Portability, Section 1.6.3.2, page 15.

¹⁹ "Background Material – Wireless-Wireline Service Provider Portability", Section 4.

directives for the implementation of location portability, and it is not a requirement for opening up local markets to competition.

3.1.2 Rate Center Consolidation

As wireline rate centers are consolidated, the likelihood increases that, when porting to a wireline carrier, a wireless subscriber could be served in the same rate center that is associated with their wireless NPA-NXX. While the definition of rate centers is under the jurisdiction of each state, this mechanism could ameliorate the "disparity," and provide an industry-acceptable alternative until longer term solutions are in place.

3.1.3 CMRS Number Assignment

CMRS carriers could obtain additional NPA-NXXs in all wireline rate centers and provide new subscribers a telephone number based on their corresponding wireline residential rate center. This would allow some of the newer CMRS subscribers to port to wireline providers with no impact. However, the assignment of NPA-NXXs for every rate center is neither an efficient use of numbers, nor a necessity for wireless carrier operation. With this solution, pre-existing CMRS customers would not be afforded the ability to port unless, by happenstance, their desired location for wireline service was in the same rate center as their wireless NPA-NXX.

3.2 Role of NANC with respect to CMRS porting

The FCC has mandated that NANC incorporate CMRS into service provider portability. Specifically, it states:

"At the same time, we recognize that it will probably be necessary to modify and update the current local number portability standards and procedures in order to support wireless number portability... Thus, we direct the NANC to develop standards and procedures necessary to provide for CMRS provider participation in local number portability."²⁰

Consequently, NANC has an obligation to fulfill this directive.

3.3 Role of the WWITF

The WWITF has been charged with defining the architecture changes necessary to integrate wireless service providers. It was recognized early on by some that this might involve discussion of location portability or rate center consolidation and was mentioned during the initial meetings of the WWITF, but there was not a consensus to either solution as it related to wireless Service Provider integration.

To date, no work has been conducted on any potential solution to the so-called issue of "disparity." Some members of the WWITF have argued that since the architecture does not support location portability and since the states determine rate centers, then porting from wireless to wireline should not exist or should be deferred as long as the difference in service definition exists. Others have argued that the conditions that exist for porting between wireline and wireless, although not 100% equal, are not grounds for deferring portability between wireline and wireless and do not require any near term solution.

The FCC has indicated that delaying the portability implementation until all providers have the same capabilities is not justified:

"While delaying implementation of number portability until all wireless concerns are fully addressed might result in an easier transition to a number portability environment for CMRS providers, we believe that such delay would be contrary to

²⁰

Number Portability Second Report and Order, ¶ 91.

the public interest because a far greater number of wireline customers could not, during the period of delay, switch local providers without also changing telephone numbers. At the same time, we recognize that it will probably be necessary to modify and update the current local number portability standards and procedures in order to support wireless number portability.”²¹

As recently as December 5, 1997, the FCC’s intention to include all wireless carriers, cellular, PCS and covered SMR, was reaffirmed when, in conjunction with its Automatic Roaming Docket, it asked:

“The Commission also invites comment on whether our roaming proposals are technically compatible with the CMRS number portability requirements established in the *Number Portability First Report and Order* in CC Docket No. 95-115.”²²

Obviously, if the FCC is concerned about the effects of number portability on roaming, it does not envisage number portability solely in the context of fixed wireless services.

3.4 A temporary “disparity” will not create a severe competitive impact

With respect to the “disparity” issue, it should be recognized that, without making modifications to the architecture, there is an asymmetry in porting between wireless and wireline. However, refusing to solve the issue of “disparity” by refusing to consider available options is a guarantee that the issue will not be resolved.

Ironically, some members of WWITF argue that the restrictions of porting from wireless to wireline are a “competitive disparity” but those same members state:

“The simple fact is that consumers are not expected to replace their wireless service with wireline service or vice versa in the foreseeable future.”²³

If no one is expected to port from wireless to wireline, then what is the “disparity” concern? There would be no desire by the consumer to do so, and consequently no need for architectural changes at this time.

However, there are participants in WWITF that perceive some potential in porting from wireline to wireless, and the FCC mandate indicates that they should not be denied the benefits of competition. Indeed, the FCC, in its *Telephone Number Portability First Report and Order*, ordered that LECs provide telephone number portability to all telecommunications service providers, including CMRS.

One philosophy is to slow down competition to reflect the lowest common denominator. As indicated by the FCC, delaying implementation until all issues are resolved is not always in the best interest of competition. While this might result in a “disparity” in the perspective of some, it reflects that “Competition will come in fits and starts.”²⁴

²¹ *Id.*

²² Commission Seeks Additional Comment On Automatic Roaming Proposals For Cellular, Broadband PCS, And Covered SMR Networks, *Public Notice*, CC Docket No. 94-54, DA 97-2558 (rel. Dec. 5, 1997).

²³ “Alternatives for Provision of Number Portability”, G. Flemming and D. Engleman, contribution to Wireless – Wireline Integration Task Force, December 4, 1997.

²⁴ See Debra Wayne, *New FCC commissioners are mum on pending wireless issues*, RADIO COMMS. REP., Nov. 24, 1997, at 12 (quoting FCC Commissioner Harold Furchgott-Roth).

4.0 Conclusion/Recommendation

As explicitly directed by the FCC, NANC is to define how to integrate wireless into the existing Service Provider portability architecture. The impacts of porting between wireless and wireline were identified by the wireless industry early on, and although there is agreement that long term solutions, such as location portability, would remove any disparity, there is not agreement that there is a need for a solution prior to the implementation of wireless wireline portability. In fact, no evidence has been presented at WWITF that the current number portability architecture would technically have any detrimental call routing or rating impacts.

To date, WWITF efforts have focused on why the FCC Order should be reconsidered rather than focusing on defining how to implement the Order.

Arguments that prohibit the full integration of wireless wireline number portability should be rejected. The WWITF should define a solution to the "disparity" issue and to be fully cognizant that wireless wireline portability will continue on schedule, even with a temporary "disparity," until a defined solution can be implemented.

1.5 Letter From the NANC

February 19, 1998

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At the meeting of the North American Numbering Council (NANC) yesterday the Council members considered the questions raised in your January 7 letter to me concerning "three key questions. . . for which Local Number Portability Architecture Working Group (LNPA/WG) is seeking direction from the NANC".

The Council concluded that it would not take a position on the public policy questions raised in your letter. Rather the Council concluded that it would direct the LNPA/WG to complete its work regarding the standards and procedures necessary to provide for CMSR provider participation in Local Number Portability for submission to the Federal Communications Commission on or before May 18, 1998.

The Council also agreed to provide to the Commission factual information regarding the issues you have identified commonly termed "rate center disparity."

Please call me if you have any questions about this matter. My number is 716 334 9419.